

Temporal . sides of cranium .

4 parts . 1) squama .

2) - zygomatic process .

3) - petrous portion

- organs of hearing & equilibrium

4) - mastoid portion - behind ear .

- made up of spongy bone
full of ear cells .

5) tymppanic portion .

Sphenoid . in front of temporal bone &
basal part of occipital b .

- lesser & greater wing .

greater - forms outer wall of orbit .

lesser - forms part of floor of cranial fossa
& nasal .

Ethmoid . full of air - holes .

- sit. at base of cranium, forming
"medial wall of orbital cavity",
"septum of nose", 3) roof & walls
of nasal cavity .

- lies in front of sphenoid .

- forms superior & middle nasal
conchae .

Bones of face .

14 of them .

2 maxilla
2 palatines
2 zygomatics
1 vomer

1 mandible
2 nasals
2 lacrimals
2 int. nasal conchae

Maxillae - assist in completing ^{roof} of mouth. floor + lateral walls of nose + floor of orbit.

- upper part of body contains socket for teeth.
- in body of maxilla - ant. rim.

Mandible - only bone in body of skull connecting with a movable joint to another jnt.

- upper part contains sockets for 16 lower teeth.
- rami - extend upward from body, each dividing into 2 processes.
- non-art. process - coronoid.
- art. with disc - condylar of temporal - mandibular jnt.

Zygomatic - cheek - bone.

Nasal - bridge of nose.

Lacrimal - smallest + most delicate.
- form medial wall of orbit.

Palatine

- back part of hard palate.
- lat. wall of nasal cavity.
- small part of orbital cavity.

Inf. nasal conchae.

- lie horizontally in lateral walls of nasal cavity.

Vomer - back of nasal septum.

Applied Anatomy

Proctured by direct or indirect violence - compression or concussion.

X-ray admisible. Dislocated mandible

Spine . 33 bones

Vertebrae - body - ant. bearing
lower - longer.

- neural (vertebral) arch. | 2 pedicles.
- 2 laminae |
- 4 art. processes. | vertebral notches
- 2 transverse processes | intervertebral foramina
- spine | 2 sup. art. + 2 inf. art.
2 inf. art.

Nanomaterial processes - 1st to 10th -

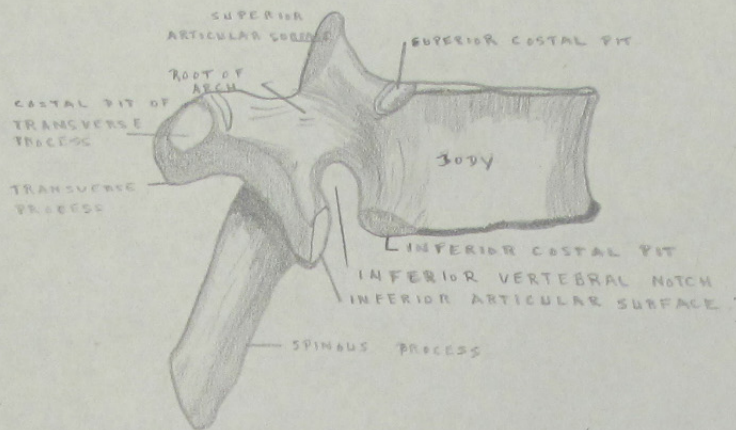
- art. with ribs

Cornutus nervosus.

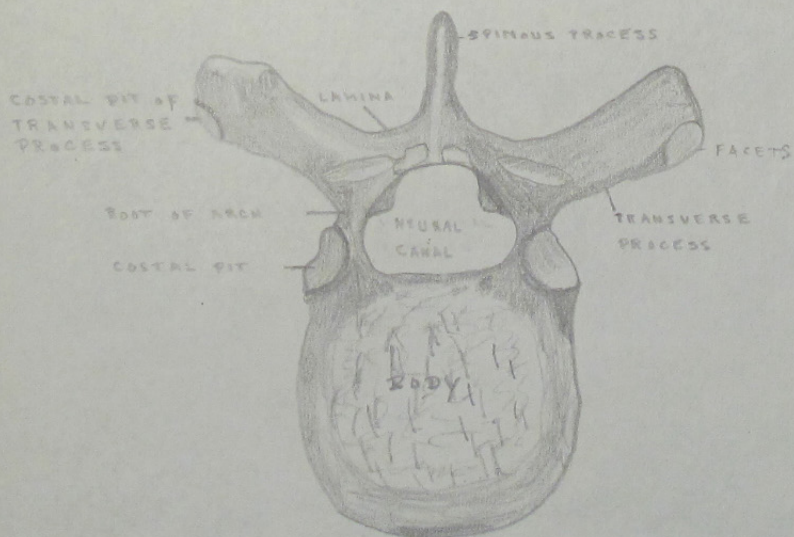
- small fishy
- tip of spine has 2 prongs.
- 2 laminae - narrow.
- preminae - large + Δ.

Immune processes

- pierced by foramen for vein + arteries
- ant. prong
- post. process



A THORACIC VERTEBRA



A THORACIC VERTEBRA

mandibular notch

- art. facets face forwards & backwards.

Atlas - no body, no spine.

- art. facets for skull.

Axis - spike from body. (dens)

- ligaments hold it to skull.

Thoracic vertebrae

- body - heart-shaped.

laminae - broad, thick, over-lapping.

- costal facets for ribs on sides of body.

- 5-8 - spines overlap & transverse

processes enclose 12 & 11.

- 1st rib - complete facet above
demi-facet below.

- 9th rib - demi-facet above
none below.

- 10th rib - whole facet.

- 11th rib - transverse p. short.

- 12th t.m. - lower art. facet like lumbar.

- art. facets face down to rib.

Lumbar vert.

most free mov.

- no facets for ribs.

- no hole in processes.

- quadrilateral spine.

- art. facets face sidem. med. & lat.

Sacrum - fusion of 5 vertebrae.

- curved - central part tilted up & back.

Coccyx - 3 to 5 vert.

Applied Anatomy

Fractured dislocation - indirect.

Alteration in normal curve - muscular

weakness - persistent use of fallen position.

Disease - T.B. of spine. Hunchback.

Pott's disease - decay - bodies buckle to front.

Rachitis, lordosis, scoliosis

N. column as whole.

Birth-long community back.

4 mm. - cervical curve.

12-18 mm. - lumbar curve.

Shock absorber.

Inter-cost. discs (fibro-cartilages)

- shape corresponds to bodies.

- in cervical + lumbar region -

thicker in front than back.

- $\frac{1}{4}$ length of vertebral column.

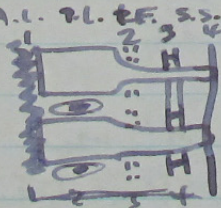
- fibro cart. - centre - soft + pulpy.

Joints - 2 types between

Slightly movable - vert. bodies

Freely movable - vert. arches.

Ligaments



Ant. Longit. lig.

- from axis to sacrum

adhes to discs - thick.

Post. Longitudinal lig.

- in canal - post.

Ligamentum Nuda -

- connect laminae of adjacent vert.
- yellow elastic tissue.
- maintain upright position.

Supra-spinous lig.

- connects tips of spines.
- \rightarrow cervical to sacrum.
- in cervical region (ligamentum nuchae).

Movements

Flexion

Extension

{ Side-bending } + rotation.

{ Lateral flexion }

7 Cervical region - movements free.

12 Thoracic " - movements restricted

5 Lumbar " - best of all.

Art. facets.

- facilitate & control movement.

Cervical - facets look up & back.

- flexion & extension free.

- rotation quite free.

Thoracic - facets on art. surface.

- flexion & extension reduced.

- rotation free.

Lumbar

- facets look sidem.

- flexion & extension free.

- lateral flexion - some rotation.

Position of spine -

Thoracic region states better than
stated bends.

lumbar region bends better than
states.

Bones of Thorax.

Conical in shape.

- narrow above - broad below
- flattened before backwards
- longer behind than in front.

Consists of sternum - Roman sword

3 parts ~~of it~~

Manubrium Δ . flat th bone.

Sternum - superior border

1) supra-sternal notch in centre.

2) lateral notch - articulation of clav.

lateral border -

costal rib - depression for 1st costal cart. / 1st rib
demi-facet for 2nd / 2nd rib

sternal angle.

- junction of manubrium with
body of sternum.

Muscles.

Pect. major

- below clav. notch - whole manubrium,
half width of breadth

S.C.M.

- above att. of P.M.

II

Body of sternum.

- broad below.

Pect. major - whole manubrium.
S.C.M.

- demi-facet for 2nd costal cart.
- 4 facets for costal cart. for
3, 4, 5 & 6 ribs on each lat. d.
- 1 facet at junction of symphoid
1 rib.
- ribs 1 - 7 true ribs.

Symphoid Process.

- cart. in youth - ossifies later.
- rest. abd. att. to sides of process
not chondr.

Ribs - 12 normally.

- 7 true ribs art. sternum.
- costochondral.
- 5 false - 3 vertebrochondral.
- 2 floating - vertebral.

Common features - 2 extremities

- post. & ant.
- shaft.

Post. lat. head - smooth art. surface
divided by slight facets for
demi-facets for bodies of vert.

neck - $\frac{1}{2}$ inch long.

tubercle - art. surface for transverse process
of vert. - medial to non-art.
protruberance.

Shaft of ribs.

- thin & flat - ant. & int. surface
angle at post. end of each shaft.
- intercostalis muscles are
att. to borders of shaft.

Ant. int.

- presents small ^{med.} depression for reception of costal cart.

Particular features

1st rib - shortest

- surfaces up + down directed
- L + tubercle same
- in position lies $1\frac{1}{2}$ " higher

at vertebral end.

2nd rib

- longer, same curve. L slight.

11th + 12th ribs

- no necks, tubercles
- 12th no angle, whole facets.

Costal cart.

- bars of hyaline cart. of considerable elasticity - non-vascular.

- connect ends of ribs with sternum, increasing in length from 1st to 7th & then decreasing.

1st 7th are connected with sternum

8th, 9th, 10th connect with lower border of cart. above

11th + 12th - end in ant. abd. wall. merely pointed.

Applied Anatomy.

Cervical ribs are not infrequent.

Causes compression of sub-clavian artery + vein or neuritis from interference with brachial plexus.

Structure common - usually of middle



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